

Appl. No. 10/765,808
Amdt. dated 09/22/2006
Response to Office Action of 07/21/2006

Attorney Docket No.: N1085-00256
[TSMC2003-0899]

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REMARKS / ARGUMENTS

Claims 1-12 and 29-33 were previously pending in this application with claims 14-28 having been withdrawn from consideration. The Office Action rejects claims 1-12 and 29-33. In the present paper, claims 1-3, 7-9, 29 and 33 are being amended.

- 5 Applicants respectfully believe that each of pending claims 1-12 and 29-33 is in patentable form and therefore request re-examination, reconsideration and allowance of each of pending claims 1-12 and 29-33.

I. Claim Objection

- 10 Applicants thank the Examiner for correcting the clerical error and renumbering the "first claim 32", to claim number 31.

II. Claim Rejections – 35 U.S.C. § 102 and 103

Each of claims 1-12 and 29-33 was rejected under 35 U.S.C. §§ 102 and 103, in various paragraphs of the subject Office Action. Each of these claim rejections is believed overcome for reasons set forth below.

15 III. Claims 1-12, 29 and 33

- 20 Claims 1, 8, 29 and 33 represent the independent claims of the rejected claim set and each of these claims has been rejected under Sections 102 or 103 in view of the following references: Japanese Patent No. 2002009042 A to Kimura; Japanese Patent No. 2000208492 A to Yamashita; U.S. Patent No. 5,556,500 to Hasegawa et al; and Japanese Patent No. 20020161262 to Nagaiwa et al. In particular, claim 8 was rejected under 35 U.S.C. § 102(b) as being anticipated by Kimura and claims 1-7, 9-12 and 29-33 were rejected under 35 U.S.C. § 103(a).

- 25 None of the references teach the feature of *"at least a portion of said focusing substantially continuously extends below a peripheral portion of said chuck"*, such as recited in independent claims 1 and 29 which are therefore distinguished from the references. The rejection of claims 1 and 29 under 35 U.S.C.

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§ 103 should therefore be withdrawn. Claims 2, 4-7 and 9-12 depend from claim 1 and these dependent claims are therefore also distinguished from the references of record.

None of the identified references teach a focus ring set in which a lower focus ring is disposed completely below the upper focus ring. In particular, none of the
5 references teach the feature of ***"focus ring set including an upper focus ring that laterally surrounds said chuck and a lower focus ring disposed completely below said upper focus ring and below said substrate"*** such as recited in independent claims 8 and 33 which are therefore distinguished from the references of record, taken alone or in combination. The rejection of claim 8 under 35 U.S.C. § 102 and the
10 rejection of claim 33 under 35 U.S.C. § 103, should therefore be withdrawn.

Since each of claims 1-12, 29 and 33 are distinguished from the references of record for reasons set forth above, the rejection of claims 1-12, 29 and 33, under 35 U.S.C. §§ 102, 103, should be withdrawn.

IV. Claims 30-32

15 Claims 30-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kimura in view of Yamashita. Claim 30 recites the feature of ***"a chuck for retaining a substrate and formed of an oxygen-impregnated material"***, and a focus ring peripherally surrounding said chuck. None of the references of record teach the chuck itself being formed of an oxygen-impregnated material.

20 Applicants respectfully submit that it is NOT obvious, under the conditions of 35 U.S.C. § 103, to form the chuck itself of an oxygen-impregnated material. A focus ring was conventionally formed of a ceramic material and surrounds the substrate being etched for the purpose of influencing the etch conditions and etching characteristics. The chuck, in contrast, is used for retaining the substrate that is being etched - NOT for
25 affecting the conditions of the etch chamber. Moreover, the focus ring's role includes influencing the direction of the reactive ions toward the wafer. The focus ring is exposed and is subjected to the ion bombardment by the reactive ions. The material of

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which the focus ring is made is therefore expected to be gradually consumed. The chuck, in contrast, is the member that retains the substrate being etched and which is generally protected from the reactive ions, by the substrate. The materials used to manufacture the chuck are chosen for their electrical characteristics and their ability to be formed into flat surfaces to receive the substrate and so as to prevent arcing. There are therefore totally different objectives and considerations in selecting the materials of construction for the chuck and focus ring.

Applicants respectfully submit that it would therefore not be obvious to modify the material for a chuck that retains a substrate based on a modification made to a focus ring used to condition the etching operations. Applicants submit that the above-highlighted feature of claim 30 is not taught or suggested by the references. Since the references fail to disclose the claimed feature relied upon, Applicants disagree with the Examiner that it would be obvious to modify the references to arrive at the claimed feature. Such is impermissible hindsight reconstruction. Therefore, the rejection under 35 USC §103 of independent claim 30, and dependent claims 31 and 32, which depend from claim 30, should be withdrawn.

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CONCLUSION

Based on the foregoing, each of pending claims 1-12 and 29-33 is in allowable form and the application in condition for allowance, which action is respectfully and expeditiously requested.

- 5 The Assistant Commissioner for Patents is hereby authorized to charge any fees or credit any excess payment that may be associated with this communication to Deposit Account 04-1679.

Respectfully submitted,

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Dated: September 22, 2006


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